Report on Services Provided

by Virginia Department of Health (VDH)

Dental Hygienists Pursuant to a Practice Protocol

in Lenowisco, Cumberland Plateau and Southside Health Districts

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Executive Summary

In 2009, the Virginia General Assembly passed legislation to revise § 54.1-2722 "License; application; qualifications; practice of dental hygiene" in Chapter 27 of Title 54.1 of the Code of Virginia (Appendix A). The changes to the practice of dental hygiene pertain specifically to those hygienists employed by the Virginia Department of Health (VDH) that work in the Cumberland Plateau, Lenowisco, and Southside Health Districts, all dentally underserved areas. The practice changes, in effect through this legislation until July 1, 2011, will enable this cohort of dental hygienists to provide preventive dental services in selected settings without the general or direct supervision of a dentist. This effort will improve access to preventive dental services for those at highest risk of dental disease, as well as reduce barriers and costs for dental care for low-income individuals. The legislation also has potential for significant changes to the practice of public health dentistry in the Commonwealth, a model that has not changed since the state dental program was established in 1921.

In July 2009, a committee was formed to develop the new practice protocol comprised of representatives from VDH, the Virginia Board of Dentistry, the Virginia Dental Association, and the Virginia Dental Hygienists' Association. Definitions and guidelines for the new remote supervision practice protocol were drafted by the committee, approved by the State Health Commissioner and provided to the Virginia Board of Dentistry. The committee defined remote supervision to mean that "a public health dentist has regular, periodic communications with a public health dental hygienist regarding patient treatment, but who has not done an initial examination of the patients who are to be seen and treated by the dental hygienist, and who is not necessarily on-site with the dental hygienist when dental hygiene services are delivered." The committee met and made minor revisions to the protocol in 2010. The current *Protocol for Virginia Department of Health Dental Hygienists to Practice in an Expanded Capacity Under Remote Supervision by Public Health Dentists* is included as Appendix B.

When the legislation passed, there were only one full-time and one part-time VDH dental hygienists located in the targeted health districts. Therefore, efforts were made to secure funds through grants and other opportunities to increase staff that could work under this new protocol. As a result, by early 2010 there were six full or part-time VDH dental hygienists practicing under remote supervision in the three health districts and one part-time hygienist who works exclusively with the fluoride varnish program under existing regulations. By comparison, in 2010 there are currently 4,081 dental hygienists licensed in Virginia who have addresses in the state.

The primary prevention services currently provided by VDH using the remote supervision protocol are through newly established school-based dental sealant programs in the targeted health districts. Dental sealant programs are evidence-based and cost-effective means to reduce the dental disease burden of a population. The hygienists were also able to provide many other additional preventive services for the individuals in these communities under existing practice protocols, including screenings, fluoride varnish, education and referrals. Although a small pilot program started in September 2009, due to the need to hire and train staff, as well as the inherent scheduling limitations and other

barriers associated with providing school-based services, the provision of sealants under remote supervision occurred primarily in spring of 2010. All other preventive and educational services described in the report are for the entire pilot project period up to September 1, 2010.

Forty-two out of 63 schools in the three health districts agreed to participate in the school-based sealant program. Information about the program and permission forms were distributed to approximately 3,573 children; 494 returned a permission form to receive a screening by a dental hygienist. Because of confidentiality, all children in a grade received the forms, although the school-based sealant program specifically targets children enrolled in the National School Lunch Program. When free and reduced lunch participation is used as the total eligible population, the response rate for the program in all three districts was 22%. These 494 children in kindergarten through seventh grade were screened, with second and sixth grade children being the primary focus. Of those children screened, 71% received dental sealants on permanent molar teeth. The average number of dental sealants placed on permanent teeth was 3.7 per child. A child could be screened and not be a candidate for a dental sealant due to the status of the permanent molar teeth, including filled, decayed or not fully erupted into the mouth. The dental hygienists referred 253 (51%) children from the sealant program to a dentist for evaluation or treatment for fillings, root canals, and/or extractions.

The cost per child to apply 3.7 sealants was 23% more under general supervision than under remote supervision ($86.76 vs. $69.35). On average, the cost per sealant was $23.45 under general supervision and $18.74 under remote supervision. According to the American Dental Association Fee Schedule for the South Atlantic Region, the average charge in private dental offices is $44.25 (range $30.00 to $64.00) for a dental sealant.

In addition to the sealant programs provided under the pilot remote supervision protocol, preventive services were provided under existing practice protocols in the target health districts. These include the fluoride varnish program in Special Supplemental Nutrition Program for Women, Infants and Children (WIC) clinics; dental education programs; and a newly developed referral program that uses home visitors. Screenings and fluoride varnish application were provided for approximately 1,000 infants and young children; 881 of these children were referred to a dentist to establish a dental home. The dental hygienists also provided dental health education to 6,632 individuals in settings such as schools and Head Start centers, as well as professional trainings for health providers. Although referrals were made from the dental sealant and fluoride varnish programs, the dental hygienists also worked with local home visiting programs in the Cumberland Plateau and Lenowisco Health Districts. These specially trained home visitors provided care coordination for families that included assistance with obtaining a dental home, making and keeping dental appointments and oral health education. As of September 1, 2010, 121 high risk children and pregnant women had received this service.

The recommendations regarding this practice protocol for VDH dental hygienists are to extend the sunset date for the pilot program from July 1, 2011 to July 1, 2012 for the

three existing areas, and explore the potential for expanding the protocol to other VDH health districts.

Overview

The Commonwealth of Virginia continues to face numerous challenges to improving access to dental health services for its most vulnerable citizens in underserved areas of the state. Although tremendous strides have been made in the reduction of dental decay among many Virginians primarily due to water fluoridation, the decline in disease prevalence and severity has not been distributed uniformly across all segments of the population. Race and socioeconomic disparities continue to be reliable predictors of disease prevalence, and geographic considerations affect access to care in many parts of the state. Persons with low income, racial and ethnic minorities, and persons with special health care needs also are less likely to have access to regular dental prevention and treatment services, further compounding their disease problems. Today, approximately 80% of the dental disease burden is found in 20% of the population.[1] Workforce capacity in public and private sectors is challenged to meet the dental health needs of these populations. As such, dental disease and access to dental health services are recognized as significant problems to be addressed through this protocol.

Dental disease, although preventable, remains the most common chronic disease of the state's children with rates comparable to the national average. Dental diseases grow progressively worse without treatment, which influences overall health and may require increasingly costly care, both medical and dental. Chronically poor dental health has been associated with failure to thrive in toddlers, compromised nutrition in children, poor self-esteem, and impaired school performance. Research has also shown that dental health status in adults can be linked to a multitude of health problems including diabetes, heart disease, and poor pregnancy outcomes.

A statewide screening of nearly 8,000 third grade school children conducted by the Virginia Department of Health (VDH) in the spring of 2009 showed that 47% of children had decay experience (decay, fillings and extractions) and 15% of children had untreated decay.[2] As in past VDH surveys, children enrolled in the federal free lunch program had more than twice the need for early or urgent treatment; 22% compared to 10% of children that do not participate in the program. The effect of lack of dental insurance is well documented in this survey. Children with dental insurance were about half as likely to have untreated decay as children that do not have dental insurance (11% vs. 25%). This survey also showed that Hispanic children had the highest need for early dental care at 19%, compared to Black children (16%) and White children (11%). Children in the southwest region of the state had the greatest need for care, with 25% having untreated decay, 60% with decay experience, and 22% needing early or urgent care. Children in this region also were the least likely to have dental sealants, 40% compared to the statewide average of 49%. These data highlight the need for improvement in the dental health of Virginia's children, especially in underserved areas and for disparate populations.

Dental Manpower

Geographic maldistribution of dentists has contributed to poor access to dental care in many areas, especially in rural, low-income, and minority communities.[3] As of 2010, according to the Virginia Board of Dentistry, there are 4,926 licensed dentists in the state with addresses in Virginia. The most recent data from a manpower analysis conducted by VDH in 2006 showed a general dentist to population ratio of one dentist per 2,472 citizens. A total of 103 counties and cities, almost 80%, were designated as state shortage areas in need of additional dentists. This analysis documents a decrease in dentist availability from the previous study conducted in 2001, which showed a dentist to population ratio of one dentist to 2,084. Additionally, 84 areas are federally designated dental Health Professional Shortage Areas (dHPSAs) in Virginia, including those designated as geographic areas, population groups, and facilities. This confirms a national trend of dentist manpower, which is predicted to continue until 2020.[4] At the same time, the number of licensed dental hygienists with addresses in the state has grown from 3,280 in 2006 to 4,081 in 2010. This increase is consistent with a national trend. According to the U.S. Department of Labor, employment of dental hygienists is expected to grow 36 percent through 2018, which is much faster than the average for all occupations. This projected growth ranks dental hygienists among the fastest growing occupations, in response to increasing demand for dental care and more use of hygienists.[5]

The 2008 Virginia Health Equity Report demonstrated that rural populations were almost twice as likely to live in high poverty census tracts as urban populations (14.6% vs. 8.7%).[6] Rural populations were also three times more likely than urban populations to live in census tracts with moderate poverty (60% vs. 20%). The same report states that rural Virginians were less likely to have job-based health coverage than those living in urban areas. One-third of rural workers in the state are employed in firms with less than 25 employees that are not required to provide health insurance.

For rural areas with low population density, a significant barrier to establishing facilities is a lack of economic base to support practitioners, as well as the ongoing challenge of recruitment and retention of those professionals practicing in these areas. These issues are well documented in the Commonwealth. In 1994, the Virginia Area Health Education Centers estimated that 24% of the state's population lived in areas with fewer dentists than the state average.[7] In 1996, the VDH Report on Availability of Dental Health Services determined that although there was not an overall shortage of dentists in the state, rural areas were impacted by a maldistribution of these providers.[8]

Even where the numbers of dentists may be adequate, the distribution of dentists to serve at-risk and vulnerable populations remains a concern. Of the nation's dentists, approximately 90% provide services in the private sector of the dental care delivery system. Of these private practitioners, 92% are still in privately owned solo or two-person practices.[9] Safety-net facilities such as VDH dental clinics and federally-supported community health centers are not adequate to meet the needs of the low-income population. Securing an adequate and flexible workforce will need to include

extending and expanding workforce capacity and productivity to meet the needs of the underserved population.

Three rural health districts, Cumberland Plateau, Lenowisco and Southside, comprise the population targeted by VDH for the use of a new practice protocol for dental hygienists to improve access to preventive dental services. Cumberland Plateau Health District includes Buchanan, Dickenson, Russell, and Tazewell counties. The district covers 1,834 square miles. All localities in Cumberland Plateau Health District are designated as dHPSAs and also are state-designated dental shortage areas. The dentist to population ratio in the district is one dentist to 5,143 individuals, which means the dentist availability in this area is half the state average. Lenowisco Health District is made up of the counties of Lee, Scott, and Wise, and the City of Norton. The district covers 1,389 square miles. Lee, Wise, and Norton are designated as dHPSAs. All counties and Norton are designated as state dental shortage areas. The dentist to population ratio is one dentist per 4,400 individuals. Southside Health District is comprised of Brunswick, Halifax, and Mecklenburg counties bordering North Carolina. The district covers a large area of 2,078 square miles with topography that is primarily farm land. All counties are designated as dHPSAs and state dental shortage areas. The dentist to population ratio is one dentist to 4,408 individuals, which is significantly below the state average.

Although improvements have been made in the dental Medicaid program, there are still not adequate numbers of dental Medicaid providers to meet the needs of the low-income population. Over 800,000 individuals in Virginia from birth to 21 years of age are currently eligible for Medicaid dental services. The number of dentists participating in the Medicaid program has been a major problem in the past and could be one reason many persons eligible for services did not receive dental care. Since 2005, "*Smiles For Children*," the Medicaid dental program, has made progress toward its goal of increasing the number of dentists in the provider network. The Virginia Department of Medical Assistance Services states that there are 1,387 dentists enrolled as Medicaid providers with at least one paid claim in the past year. Although a large increase over previous years, this number represents a small proportion of the 4,926 licensed dentists who have addresses in the state. Only 907 of these dentists provided services in excess of $10,000 to their Medicaid patients. Of the state's 136 cities and counties, 11 had no Medicaid enrolled dentists in FY2010.

The above summary regarding disease status, population disparities, and access to preventive services and dental providers provides a picture of the current issues confronting Virginia today. Changes in numbers and locations of public and private dentists, shifts in the population, and other factors such as insurance coverage play a major role in the issues that need to be considered when planning toward improving the dental health of the individuals in the Commonwealth. Areas that have been targeted by this legislation are among the most underserved rural communities in the state with regard to dental health services.

Practice Protocol for VDH Dental Hygienists

To improve access to oral health care and reduce health care disparities, the allied dental workforce may support innovative approaches, such as the pilot protocol for VDH hygienists. The dental hygienist is a state-licensed health professional who has graduated from an accredited dental hygiene program in an institution of higher education. The registered dental hygienist or licensed dental hygienist is educationally prepared for practice upon graduation from an accredited dental hygiene program (certificate, associate, or baccalaureate) within an institution of higher education. In order to practice, hygienists must also successfully complete a national written board examination and state licensing examinations.

On July 1, 2002, legislation was passed to allow dental hygienists in Virginia, as in most states, to practice under general supervision in addition to direct supervision. General supervision means that a dentist has examined the patient and authorized a dental hygienist to perform procedures but the dentist need not be present in the treatment facility during the delivery of care. Additionally, in 2008, legislation passed to allow a nurse or dental hygienist to administer topical fluoride varnish to the teeth of children aged six months to three years old through an oral or written order or standing protocol issued by a doctor of medicine or dentistry. These changes have improved access to dental care for some populations. However, in areas where dentists are not present, and for low income populations with other barriers to care, these provisions have not been enough to improve dental health.

A recent review of other states shows that in 31 states, a dentist need not examine a patient before a hygienist performs services in certain practices outside the office. This "direct access" is authorized in a variety of settings such as schools, Head Start programs, public health programs, adult care homes, and hospitals, and often includes the hygienists' full scope of dental hygiene services.[10] These practice models maximize the full potential of increased access to prevention services at a reduced cost.

The current pilot protocol is Virginia's step toward providing services to underserved populations through a less restrictive oversight requirement for dental hygienists in specific settings. Based on the legislative guidance, VDH established and convened a committee in 2009 to develop the pilot dental hygiene practice protocol. The committee had representation from the agencies outlined in the legislation which included the VDH Dental Health Program, the VDH District Directors and Community Health Services, the Virginia Board of Dentistry, the Virginia Dental Hygienists' Association, and the Virginia Dental Association (Appendix C).

Guidelines for remote supervision were developed by the committee to be used for the pilot program. The committee defined remote supervision to mean that "a public health dentist has regular, periodic communications with a public health dental hygienist regarding patient treatment, but who has not done an initial examination of the patients who are to be seen and treated by the dental hygienist, and who is not necessarily onsite with the dental hygienist when dental hygiene services are delivered." In addition to

defining remote supervision for VDH hygienists, the committee developed guidelines for the management and oversight required by VDH dentists and the requirements for a licensed dental hygienist to practice under this protocol. In July 2009, the State Health Commissioner signed the remote supervision guidelines, which were subsequently provided to the Virginia Board of Dentistry. At a follow-up meeting, based on the discussion of the existing programs and services, several changes were proposed to amend the original protocol in order to document VDH dentist oversight and management. The revised protocol was approved by the State Health Commissioner in September 2010, to be provided to the Board of Dentistry (Appendix B).

Protocol Implementation

At the time that legislation was passed to allow for the pilot program in the targeted areas, existing VDH dental hygiene staff was limited to one full-time position in the Cumberland Plateau Health District and one part-time hygienist in the Southside Health District (the part-time hygienist worked only in the existing fluoride varnish program). To fund new dental hygienist positions to work under the new practice protocol in the three targeted health districts, VDH applied for and received a federal Oral Health Workforce Grant from the Health Resources and Services Administration (HRSA). One of the primary grant requirements was to establish school-based dental sealant programs, thus providing an ideal opportunity to pilot the remote supervision protocol. VDH received the grant award for this project in the fall of 2009. Additional efforts were made to establish and recruit a position funded locally by the Lenowisco Health District during the same period. Recruiting and hiring of all staff was completed by early February 2010 resulting in six full or part-time dental hygienists to work under remote supervision in these target areas. The applicant pool was strong and enthusiastic about serving in a public health capacity to meet the needs of underserved populations. The successful candidates had experience as required to practice under the protocol, knowledge of the targeted populations, and sensitivity to some of the unique challenges of these large geographic rural areas. The VDH Dental Health Program developed and implemented an orientation and training plan for dentists to use with the hygienist practicing under remote supervision. VDH dentists were responsible for providing initial on-site training for all the hygienists according to the new remote supervision protocol requirements (Appendix B).

Working with the district health directors and other advisory committee members, an implementation plan was developed for each district for programs that would operate under the new remote protocol. It was decided that the initial primary focus of the remote practice protocol would be to establish school-based sealant programs targeting low-income children who did not have a family dentist. A dental sealant is a plastic material that is applied to the chewing surfaces of the back teeth (molars) to prevent cavities. The plastic material acts as a barrier so cavity-causing bacteria cannot get into the pits and grooves in the chewing surfaces of the teeth. According to the Centers for Disease Control and Prevention, 90% of children's cavities occur in teeth that have pits and grooves. Two-thirds of those occur on the chewing surface. In its systematic review of the literature, the Centers for Disease Control and Prevention Task Force on

Community Preventive Services found strong evidence that school-based and school-linked sealant programs are effective in reducing tooth decay, with a median decrease in decay of 60%.[11] As a result, it is recommended that dental sealants be placed on the permanent molar teeth of children shortly after they erupt into the mouth. Sealant programs typically include oral health education, dental screening, referral for dental treatment, and dental sealant and fluoride varnish application. Targeting children at high risk for tooth decay and applying dental sealants can result in considerable savings for society. Focusing on school-based sealant programs was also in keeping with the objectives of the HRSA grant that provided the funding to staff the pilot.

Public programs that support the placement of dental sealants are quite successful and in many states dental hygienists are the primary providers in school-based sealant programs. A dental hygienist is widely accepted as equally skilled in applying dental sealants as a dentist. A 10-year retrospective study comparing the longevity of sealants placed by dentists, hygienists, and assistants found that all operators are effective in applying sealants.[12]

The dental hygienists spent substantial effort working with superintendents, principals, school nurses, teachers, and parent-teacher organizations in the schools in all three districts to provide information about the dental sealant program and encourage participation. The hygienists also met with local private dentists and safety net providers to introduce the program, gain acceptance, and facilitate referral of children with treatment needs. Unfortunately, Virginia had one of the worst winters on record in 2010, so although most schools chose to participate in the program, many were closed and lost instructional days due to inclement weather. Some of the participation rates were disappointing as a result. However, the programs are restarting for the 2010-2011 school year with approvals from all school systems to operate the sealant program.

Report of Services Provided

Services Provided Under Remote Supervision

As described above, the primary services provided under remote supervision this year were in the school-based dental sealant programs. A few services were provided in the fall of 2009 by one dental hygienist in Cumberland Plateau Health District, but the majority of services were provided from March to May 2010 due to the time needed to fund, hire and train the HRSA grant-funded dental hygienists, as well as gain approvals from school systems and parents for program participation. Summary data for the school sealant programs are presented in this section and reports for each health district (Cumberland Plateau, Lenowisco and Southside) are in Appendix D.

A total of 42 out of 63 schools in the three health districts agreed to participate in the program. Several schools and counties opted to start the program in the fall of 2010. Information about the program and permission forms were distributed to 3,573 children, 494 (14%) of whom returned a permission form to receive a screening by a dental hygienist. Because of confidentiality issues, all children in a grade received the forms,

although the program specifically targets children enrolled in the National School Lunch Program. When only free and reduced lunch program participation is used as the total eligible population, the response rate for the program in all three districts was 22%. Of those children screened, 353 (71%) received dental sealants on permanent molar teeth. A child could be screened and not be a candidate for a dental sealant due to the status of the tooth, including filled, decayed or not fully erupted. A total of 1,305 dental sealants were provided for all children in the program, resulting in an average of 3.7 teeth provided with dental sealants per child. The dental hygienists referred 253 (51%) children to a dentist for evaluation or treatment for fillings, root canals, and/or oral extractions (Table 1).

Table 1. Sealant Program Summary Data Provided Under Remote Supervision, All Grades, By Health District

Health District	Number of Children Screened (response rate)*	Number of Children Referred	Number of Children Sealed	Number of Teeth Sealed	Number of Teeth Sealed/Child (Average)
Cumberland Plateau	124 (20%)	48	83	273	3.3
Lenowisco	281 (21%)	167	196	807	4.1
Southside	89 (33%)	38	74	225	3.0
Total	**494 (22%)**	**253**	**353**	**1,305**	**3.7**

*****Based on average free and reduced lunch program enrollment

The Centers for Disease Control and Prevention has implemented computer software, Sealant Efficiency Assessment for Locals and States (SEALS), as an evaluation and benchmarking tool for administrators of community sealant programs.[13] This tool was modified and used to collect and report the data for this report.

Cost Comparison of Services Provided Under Remote vs. General Supervision

Because VDH had dental sealant programs operating in other districts under the general supervision of a public health dentist, cost comparison data were available for the remote supervision model. The ability to provide services to children, as well as the cost-effectiveness of a sealant program depends in part on whether a dentist must examine children before sealants can be placed.

Costs were calculated for the two models using fixed costs including staff salaries for clinic and administrative time, travel to the school, dental materials, clinic supplies, and equipment depreciation, and were based on an overall average of 3.7 sealants placed per child. Using these data and assumptions, the cost per child to apply 3.7 sealants was 23% more under general supervision than under remote supervision ($86.76 vs. $69.35). On average, the cost per sealant was $23.45 under general supervision and $18.74 under remote supervision. The final analysis could not incorporate such factors as the amount of classroom time missed. Specifically, the general supervision model required two visits, one to the dentist for the screening and treatment plan, followed by a visit to the

hygienist to apply the sealants. In contrast, the screening and sealants were conducted at the same visit under the remote supervision model.

According to the American Dental Association Fee Schedule for the South Atlantic Region, the average charge in private dental offices is $44.25 (range $30.00 to $64.00) for a dental sealant.[14]

Services Provided Under Other Existing Supervision Protocols

In addition to the sealant programs provided under the pilot remote supervision protocol, preventive services were provided under existing practice protocols. Therefore, to provide a comprehensive picture of preventive services provided by all VDH dental hygienists in Cumberland Plateau, Lenowisco and Southside Health Districts, the following data are provided for each health district.

Fluoride Varnish Program: Under existing regulations and a standing order from a dentist or physician, VDH dental hygienists can provide screening, education, and fluoride varnish. Fluoride varnish is an evidence-based application for the primary (baby) teeth that reduces decay by 40% to 60%. The VDH "Bright Smiles for Babies" program has partnered with the Special Supplemental Nutrition Program for Women, Infants and Children (WIC) as a way to provide low-income children and their parents with these services. Screenings and fluoride varnish application were provided for approximately 1,000 children in the three districts; 881 of these children were referred to a dentist to establish a dental home (Table 2). Parental education was provided to 1,182 WIC parents which is included in Table 3 below.

Table 2. Services Provided through "Bright Smiles for Babies" Fluoride Varnish Program by VDH Dental Hygienists in Three Health Districts

Health District	Number of Children Screened*	Number of Children Treated with Fluoride Varnish	Number of Children Referred to a Dental Home
Cumberland Plateau	458	442	332
Lenowisco	28	24	3
Southside	555	490	546
Total	1,041	956	881

*The number of children screened is greater than those treated with varnish because some children screened do not have teeth yet

Dental Health Education: Dental hygienists provided dental health education to a variety of customers in the programs operating under all practice protocols. For example,

education of teachers, parents and students was conducted in many schools to increase knowledge of and participation in the school-based sealant programs. Other venues included the Bright Smiles for Babies program in WIC clinics; preschool programs such as Head Start; and professional trainings for nurses and other health providers. In total, 6,632 individuals were provided dental health education or training during this pilot period (Table 3).

Table 3. Education and Training Provided by VDH Dental Hygienists in Three Health Districts

Health District	Number of Preschool and School Age Children Educated	Number of Parents and Citizens Educated	Number of Teachers Trained	Number of Professionals Trained
Cumberland Plateau	1,201	1,242	237	15
Lenowisco	1,735	149	86	86
Southside	923	785	19	154
Total	**3,859**	**2,176**	**342**	**255**

Dental Referrals: Dental hygienists can serve as an efficient pipeline for identifying and referring patients in need of care by a dentist. In addition to the 253 children referred to a dentist for treatment through the dental sealant program and 881 children referred to a dental home through the fluoride varnish program, the dental hygienists in the targeted health districts worked with local home visiting programs in the Cumberland Plateau and Lenowisco Health Districts. Due to budget reductions in the local home visiting program cuts, the Southside project has not yet been established.

Home visiting programs offer a mechanism for ensuring that at-risk families have ongoing health education and linkage with public and private community services, including assistance with making and keeping dental appointments. To support the project, the hygienists maintain communication with the home visitors regarding patients they have referred, provide technical support, and record tracking information. Additionally, the dental hygienists have contacted all pediatric and general dentists in their districts to inform them about the project and to ask for their assistance in providing dental care for the children. Most dentists responded favorably; by locality, 60% - 100% agreed to be on a referral list developed by the hygienists. The dental hygienists also have begun contacting the dental offices to make sure appointments have been kept, treatment has been completed, and a routine follow-up dental visit has been scheduled. Funding for home visitors to provide dental education and care coordination was from the HRSA workforce grant.

As shown in Table 4 below, a total of 121 pregnant women and children have been referred to a home visitor for education and care coordination.

Table 4. Referrals to Home Visitors by Dental Hygienists in Three Targeted Health Districts

Health District	Number of Pregnant Women Referred to Home Visitor (HV)	Number of Children Referred to HV (Age 0-4 years)	Number of School-Age Children Referred to HV (Age 5-14 years)	Number of Children with Special Needs Referred to HV (All ages)
Cumberland Plateau	1	15	8 (16 pending)*	4
Lenowisco	4	16	73	0
Southside	0	0	0 (41 pending) **	0
Total	**5**	**31**	**81 (57 pending)**	**4**

***** Pending referrals in Lenowisco will be accomplished shortly as the new school year commences.
**The Southside project has not been established to date due to local home visiting program reductions. The dental hygienists follow-up on children with urgent needs to ensure that they get care.

Recommendations

The recommendations regarding the practice protocol for VDH dental hygienists are as follows:

- Extend the sunset date for the from July 1, 2011 to July 1, 2012 for the pilot practice protocol program in the three existing health districts (Cumberland Plateau, Lenowisco and Southside) and

- Explore the potential for expanding the protocol to other VDH health districts.

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14. American Dental Association (ADA). 2009 Survey of Dental Fees. ADA Survey Center, December 2009.

Appendix A - § 54.1-2722 "License; application; qualifications; practice of dental hygiene" in Chapter 27 of Title 54.1 of the Code of Virginia as follows:

E. (Expires July 1, 2011) Notwithstanding any provision of law or regulation to the contrary, a dental hygienist employed by the Virginia Department of Health who holds a license issued by the Board of Dentistry may provide educational and preventative dental care in the Cumberland Plateau, Southside, and Lenowisco Health Districts, which are designated as Virginia Dental Health Professional Shortage Areas by the Virginia Department of Health. A dental hygienist providing such services shall practice pursuant to a protocol developed jointly by the medical directors of each of the districts, dental hygienists employed by the Department of Health, the Director of the Dental Health Division of the Department of Health, one representative of the Virginia Dental Association, and one representative of the Virginia Dental Hygienists' Association. A report of services provided by dental hygienists pursuant to such protocol, including their impact upon the oral health of the citizens of these districts, shall be prepared and submitted by the medical directors of the three health districts to the Virginia Secretary of Health and Human Resources by November 1, 2010. Nothing in this section shall be construed to authorize or establish the independent practice of dental hygiene.

Appendix B - Protocol for Virginia Department of Health Dental Hygienists to Practice in an Expanded Capacity under Remote Supervision by Public Health Dentists

As authorized by law, the Virginia Department of Health is conducting a pilot program in three health districts, Cumberland Plateau, Lenowisco and Southside, to assess the use of dental hygienists employed by VDH in an expanded capacity as a viable means to increase access to dental health care for underserved populations. This protocol shall guide the pilot program.

Definitions:

- *"Expanded capacity"* means that a VDH dental hygienist provides education, assessment, prevention and clinical services as authorized in this protocol under the remote supervision of a VDH dentist.

- *"Remote supervision"* means that a public health dentist has regular, periodic communications with a public health dental hygienist regarding patient treatment, but who has not done an initial examination of the patients who are to be seen and treated by the dental hygienist, and who is not necessarily onsite with the dental hygienist when dental hygiene services are delivered.

Management:

- Program guidance and quality assurance shall be provided by the Dental Health Program in the Division of Child and Family Health at VDH for the public health dentists providing supervision under this protocol. Guidance for all VDH dental hygienists providing services through remote supervision is outlined below:

    - VDH compliance includes a review of the remote supervision protocol with the dental hygienist. The hygienist will sign an agreement consenting to remote supervision according to the protocol. The hygienist will update the remote agreement annually attaching a copy of their current dental hygiene license, and maintain a copy of the agreement on-site while providing services under this protocol.

    - VDH training by the public health dentist will include didactic and on-site components utilizing evidence based protocols, procedures and standards from the American Dental Association, the American Dental Hygienists' Association, the Centers for Disease Control and Prevention, the Association of State and Territorial Dental Directors, as well as VDH Occupational Safety and Health Administration (OSHA), Hazard Communication and Blood Borne Pathogen Control Plans.

Management (cont'd):

- VDH monitoring by the public health dentist during remote supervision activities shall include tracking the locations of planned service delivery and review of daily reports of the services provided. Phone or personal communication between the public health dentist and the dental hygienist working under remote supervision will occur at a minimum of every 14 days.

- VDH on-site review to include a sampling of the patients seen by the dental hygienist under remote supervision will be completed annually by the supervising public health dentist. During the on-site review, areas of program and clinical oversight will include appropriate patient documentation for preventive services (consent completed, assessment of conditions, forms completed accurately), clinical quality of preventive services (technique and sealant retention), patient management and referral, compliance with evidence-based program guidance, adherence to general emergency guidelines, and OSHA and Infection Control compliance.

- The protocol may be revised as necessary during the trial period through agreement of the committee composed of medical directors of the three health districts, staff from the Division of Dental Health and Community Health Services, and representatives from the Virginia Dental Hygienists' Association, Virginia Dental Association and Virginia Board of Dentistry. This committee shall meet and discuss program progress and any necessary revisions to the protocol at periodic intervals beginning July 1, 2009. The protocol and any revisions will be approved by the State Health Commissioner of VDH.

- No limit shall be placed on the number of full or part time VDH dental hygienists that may practice under the *remote supervision* of a public health dentist(s) in the three targeted health districts.

- The dental hygienist may use and supervise assistants under this protocol but shall not permit assistants to provide direct clinical services to patients.

- The patient or responsible adult should be advised that services provided under the remote supervision protocol do not replace a complete dental examination and that they should take their child to a dentist for regular dental appointments.

Remote Supervision Practice Requirements:

- The dental hygienist shall have graduated from an accredited dental hygiene school, be licensed in Virginia, and employed by the Virginia Department of Health in a full or part time position and have a minimum of two years of dental hygiene practice experience.

Remote Supervision Practice Requirements (cont'd):

- The dental hygienist shall annually consent in writing to providing services under remote supervision.

- The patient or a responsible adult shall be informed prior to the appointment that no dentist will be present, that no anesthesia can be administered, and that only limited described services will be provided.

- Written basic emergency procedures shall be established and in place, and the hygienist shall be capable of implementing those procedures.

Expanded Capacity Scope of Services:

Public health dental hygienists may perform the following duties under *remote supervision:*

- Performing an initial examination or assessment of teeth and surrounding tissues, including charting existing conditions including carious lesions, periodontal pockets or other abnormal conditions for further evaluation by a dentist, as required.
- Prophylaxis of natural and restored teeth.
- Scaling of natural and restored teeth using hand instruments, and ultrasonic devices.
- Assessing patients to determine the appropriateness of sealant placement according to VDH Dental Program guidelines and applying sealants as indicated. Providing dental sealant, assessment, maintenance and repair.
- Application of topical fluorides.
- Providing educational services, assessment, screening or data collection for the preparation of preliminary written records for evaluation by a licensed dentist.

Required Referrals:

- Public health dental hygienists will refer patients without a dental provider to a public or private dentist with the goal to establish a dental home.

- When the dental hygienist determines at a subsequent appointment that there are conditions present which require evaluation for treatment, and the patient has not seen a dentist as referred, the dental hygienist will make every practical or reasonable effort to schedule the patient with a VDH dentist or local private dentist volunteer for an examination, treatment plan and follow up care.

Approved July, 2009; Revised September, 2010, Signed by the State Health Commissioner September 2010

Appendix C

Virginia Department of Health (VDH) Dental Hygienist Protocol Committee

Name	Title	Agency
Dr. Terry Dickinson	Executive Director	Virginia Dental Association
Kelly T. Williams, RDH, MS	Past President	Virginia Dental Hygienist's Association
Sandra Reen	Executive Director	Virginia Board of Dentistry
Dr. John Dreyzehner	District Director Cumberland Plateau Health District	Virginia Department of Health
Dr. E. Sue Cantrell	District Director Lenowisco Health District	Virginia Department of Health
Dr. Charles Devine	District Director Southside Health District	Virginia Department of Health
Norma Marrin	Executive Advisor Community Health Services	Virginia Department of Health
Dr. Karen Day	Dental Program Director Office of Family Health Services	Virginia Department of Health
Dr. Lynn Browder	Dental Program Manager Office of Family Health Services	Virginia Department of Health
Susan Pharr, RDH	Program Coordinator Office of Family Health Services	Virginia Department of Health

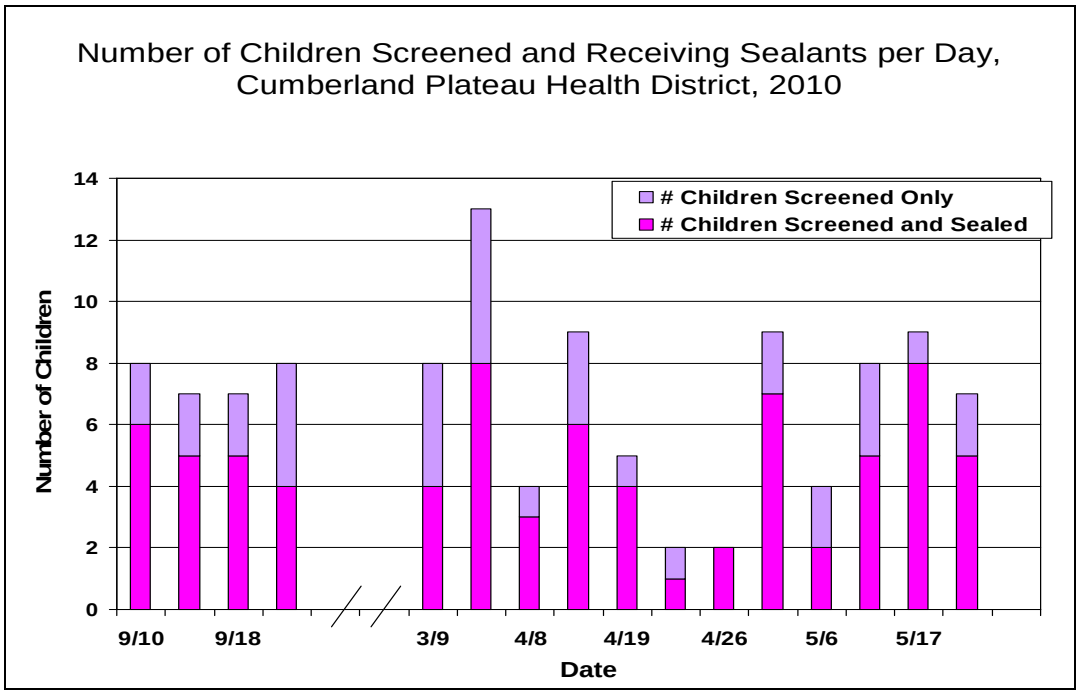
Appendix D
Services Provided by VDH Dental Hygienists Under Remote Supervision

Cumberland Plateau Health District

Seventeen out of 25 schools in the Cumberland Plateau Health District participated in the VDH school-based sealant program during the 2009-2010 school year. The percentage of students enrolled in the free and reduced lunch program in these schools ranged from 39% to 82% (median=63%). Dental sealant program services were provided during September 2009 and March through May 2010.

Permission forms were distributed to 963 children at the 17 schools (742 in second grade and 221 in sixth grade). The dental hygienist screened the 124 children who returned permission forms and 48 (39%) were referred to a dentist for evaluation or treatment for fillings; root canals, and/or oral surgery. The response rate was 13% of total enrollment, with 20% of children enrolled in the free and reduced lunch program participating. A total of 112 second grade children were screened, 73 of whom received sealants. Twelve sixth grade children were screened, ten of whom received sealants. The 83 children who received sealants had a total of 273 sealants placed on permanent molar teeth, for an average of 3.3 sealed teeth per child.

The graph below shows the number of second and sixth grade children who were screened and/or received dental sealants by school day in Cumberland Plateau Health District.



The table below also shows the number of children who were screened, received sealants, or were referred to a dentist according to locality and school in Cumberland Plateau Health District.

Table 5: Services Provided in Cumberland Plateau Health District

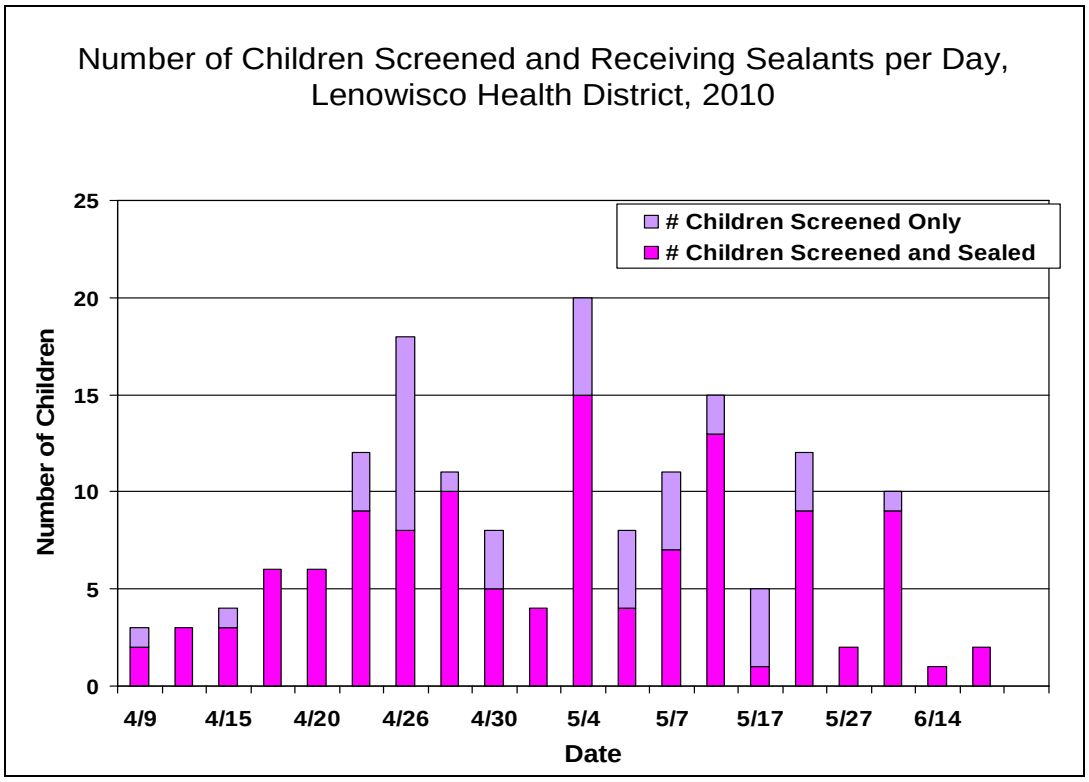
Locality/School	# Children Screened	# Children Sealed	# Children Referred
Buchanan County	**65**	**40**	**23**
Council Elementary/Middle	3	2	0
Hurley Elementary/Middle	13	8	5
J.M. Bevins Elementary	8	4	4
Riverview Elementary	11	6	3
Russell Prater Elementary	8	4	2
Twin Valley Elementary/Middle	22	16	9
Dickenson County	**28**	**20**	**11**
Clinchco Elementary	9	8	3
Clintwood	5	3	4
Ervinton Elementary	4	2	2
Longs Fork Elementary	3	2	0
Sandlick Elementary	7	5	2
Russell County	**31**	**23**	**14**
Belfast Elk Garden Elementary	2	2	1
Castlewood Elementary	5	4	4
Cleveland Elementary	4	3	1
Givens Elementary	2	1	1
Honaker Elementary	9	7	4
Lebanon Elementary	9	6	3
District Total	**124**	**83**	**48**

Lenowisco Health District

Seventeen out of 23 schools in the Lenowisco Health District participated in the VDH school-based sealant program during the 2009-2010 school year. The percentage of students enrolled in the free and reduced lunch program in these schools ranged from 34% to 85% (median=62%). Dental sealant program services were provided from April through June 2010.

Permission forms were distributed to 2,207 children, 635 in second grade, 279 in sixth grade, and 1,293 other grades. The dental hygienists screened the 281 children who returned permission forms and 167 (59%) were referred to a dentist for evaluation or treatment for fillings; root canals, and/or oral surgery. The response rate was 13% of total enrollment, with 21% of children enrolled in the free and reduced lunch program participating. A total of 129 second grade children were screened, 94 of whom received sealants. Thirty-two sixth grade children were screened, 25 of whom received sealants. Of the 120 children in other grades that were screened, 77 received sealants. The 196 children who received sealants had a total of 807 sealants placed on permanent molar teeth, for an average of 4.1 sealed teeth per child.

The graph below shows the number of second and sixth grade children who were screened and/or received dental sealants by school day in Lenowisco Health District.



The table below shows the number of children who were screened, received sealants, or were referred to a dentist according to locality and school in Lenowisco Health District.

Table 6: Services Provided in Lenowisco Health District

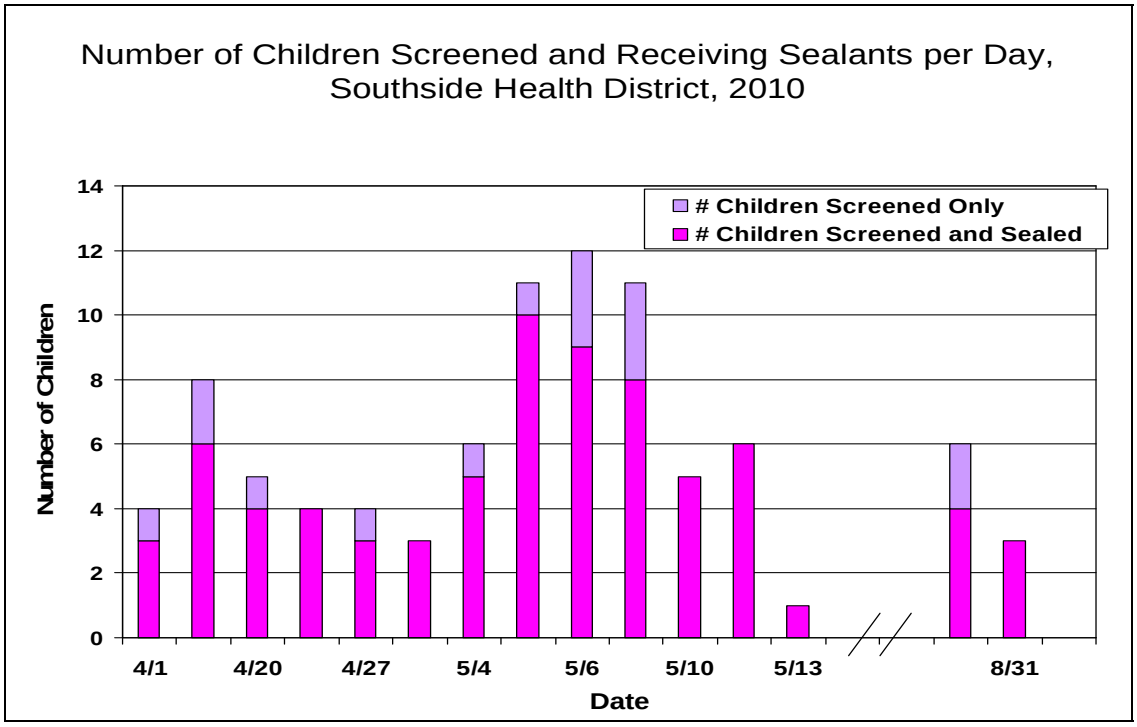
Locality/School	# Children Screened	# Children Sealed	# Children Referred
Lee County	**63**	**43**	**34**
Elk Knob Elementary	12	9	7
Elydale Elementary	8	4	4
Ewing Elementary	11	7	3
Flatwoods Elementary	12	9	6
Keokee Elementary	9	7	6
St. Charles Elementary	6	6	6
Stickleyville Elementary	5	1	2
Scott County	**78**	**61**	**41**
Duffield-Pattonsville Primary	26	23	20
Fort Blackmore Primary	5	3	4
Hilton Elementary	3	3	1
Nickelsville Elementary	6	6	1
Shoemaker Elementary	29	18	11
Weber City Elementary	6	6	2
Yuma Elementary	3	2	2
Wise County/Norton City	**140**	**92**	**92**
Appalachia Elementary	9	7	8
Norton Elementary	56	39	36
Powell Valley Primary	75	46	48
District Total	**281**	**196**	**167**

Southside Health District

Eight out of 15 schools in the Southside Health District participated in the VDH school-based sealant program during the 2009-2010 school year and the first month of the 2010-2011 school year. All participating schools have a high percentage of children enrolled in the free and reduced lunch program, ranging from 52% to 80% (median=67%). Dental sealant program services were provided during April, May, and August 2010.

Permission forms were distributed to 403 second grade children. The dental hygienist screened the 89 children who returned permission forms and 38 (43%) were referred for further evaluation or treatment to a dentist. The reasons for dentist referrals included need for fillings; root canals, and/or oral surgery. The response rate was 22% of total enrollment, with 33% of children enrolled in the free and reduced lunch program participating. A total of 74 second grade children received sealants. The 74 second grade children who received sealants had a total of 225 sealants placed on permanent molar teeth, for an average of 3.0 sealants per child. More than half, of the children needed sealants on all four first molar teeth.

The graph below shows the number of second grade children who were screened and/or received dental sealants by school day in Southside Health District.



The table below shows the number of children who were screened, received sealants, or were referred to a dentist according to locality and school in Southside Health District.

Table 7: Services Provided in Southside Health District

Locality/School	# Children Screened	# Children Sealed	# Children Referred
Brunswick County	**40**	**33**	**13**
Meherrin Powellton Elementary	11	10	3
Red Oak-Sturgeon Elementary	12	9	5
Totaro Elementary	17	14	5
Halifax County	**49**	**41**	**25**
Clays Mill Elementary	4	3	3
Cluster Springs Elementary	12	10	2
Meadville Elementary	4	4	4
Scottsburg Elementary	15	13	7
Sydnor Jennings Elementary	14	11	9
District Total	**89**	**74**	**38**